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Before the

FEDERAL COMMUNICATIONS COMMISSION

Washington, D.C. 20554

In the Matter of

Land Mobile Communications Council

Petition for reallocation of

Spectrum for the

Private Mobile Radio Services

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RM-9267

RE: Comments of

Andrew Milton Jensen, N5IA

System Engineer, The Zia Connection

Technical Supervisor, Cactus Intertie System

Technical Advisor, Eastern Arizona Amateur Radio Society, Inc.

Rt. 1, Box 176

Virden, New Mexico, 85534

May 25, 1998

TO: The Commission:

I am a licensed Amateur Radio operator residing in southwestern New Mexico near the Arizona state line. I am very active and extremely involved in operations which occur on many Amateur Radio frequencies and which serve the general public through emergency, disaster, and public service communications. **I am strongly opposed to the portions of RM-9267 where PMRS use of the 420-430 MHz and 440-450 MHz bands is proposed.**

I have been involved for more than 20 years in the designing, construction, operation, and maintenance of VHF and UHF linked radio systems in this area of the United States. In

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this region of the country, the frequency sub-band 420 to 430 MHz is used exclusively for full duplex linking from site to site. The frequency sub-band 440 to 450 MHz, is used extensively by mobile relays for voice communication, control, packet data transmission, and remote controlled station operations.

I am intimately involved in three such systems. The following descriptions indicate the extent of the use of the aforementioned frequency bands by each system.

The Zia Connection is a full time linked VHF (144 MHz) repeater system available to all licensed Amateurs with coverage from eastern New Mexico including El Paso, Texas, to southeastern California, encompassing the four major metropolitan areas of Albuquerque, El Paso, Tucson, and Phoenix. This system is utilized on a daily basis for weather, travel conditions and accident reporting. It has been used many times for communication for public service officials during life threatening situations accompanying extreme weather conditions. To connect the widely separated sites in this system, 13 duplex links operating in the 420 to 430 MHz frequency sub-band are used.¹ The actual frequency pairs are re-used where good engineering practice will allow.

The Cactus Intertie System is a full time, linked, controllable UHF system with coverage of most of the states of Texas, New Mexico, Arizona, California, Utah, plus southern Nevada and western Colorado. This system is utilized on a daily basis by a membership of

¹See appendix 1, map of The Zia Connection network

approximately 1,300 licensed Amateurs. In my region of operation alone, the system was extensively used during flooding in eastern Arizona in 1978, 1983, and 1993. Not only was it utilized for floodwater level reports, but it was the only communications link for Red Cross, National Guard, and public health and welfare messages to and from Duncan, AZ for a total of 5 days in December, 1978. Flood waters inundated the local telephone office such that there was no local or long distance service for that period of time. In 1983, long distance telephone service was interrupted for 3 days by flooding. This system carried much health and welfare traffic. More recently the system was used extensively during the Northridge earthquake in southern California in January, 1993. Communications into and out of the earthquake damaged region via telephone was impossible for several days. This system provided reliable full time communications to several states, including Arizona and New Mexico, especially during the period of time the telephone system was damaged or disabled. This communication was otherwise impossible to accomplish.

In my region of the country, Arizona and New Mexico, the Cactus Intertie System operates 36 duplex link pairs in the 420 to 430 MHz frequency range, and 30 mobile relay pairs in the 440 to 450 MHz frequency range.² The actual frequency pairs are heavily re-used where such re-use is consistent with good engineering practice and the applicable regional frequency utilization plan. Typically, each frequency pair is re-used 3 to 6 times within each coordination region.

²See appendix 2, map of the Cactus Intertie System

The EAARS (Eastern Arizona Amateur Radio Society, Inc.) Network is a full time VHF and UHF repeater system with coverage of southeastern Arizona and southwestern New Mexico. This system is used on a daily basis for "local" weather and traffic conditions. It is used extensively for search and rescue efforts. A number of lives have been saved due to use of this system in areas where no other public service communications systems work effectively. This system was used to report an escape from a minimum security federal prison. Because of timely reporting of the event, the prisoner was apprehended within one hour of the escape. This system utilizes one pair of frequencies in the 420 to 430 MHz sub-band, and two pairs of frequencies in the 440 to 450 MHz sub-band.

I have been a licensed Amateur Radio operator for 38 years. I personally use many of the frequencies within the 420 to 430 MHz and 440 to 450 MHz sub-bands on a daily basis. I have dedicated nearly 25 years to the development and implementation of these systems in order to have reliable daily and emergency communication capability. The extremely large and widely dispersed areas of the southwest need linked systems to be effective. The loss of effective use of the 420 to 430 MHz and 440 to 450 MHz sub-bands would totally destroy these public service communications systems UNLESS THE ENTIRE AND COMPLETE COST OF ANY OR ALL SPECTRUM RELOCATION IS BORNE BY THE DISPLACING SERVICE, THE PMRS. These systems were and are built with many, many hours of donated effort and services. The vast systems we are able to utilize in public service activities are the resultant product of these efforts, accumulated over more than 2 decades. Replacing these efforts is impossibly expensive for us to accomplish on our own. It is completely

unreasonable to discard these systems out of hand, as effectively proposed by the LMCC in their petition.

The 420 to 430 MHz and 440 to 450 MHz sub-bands are allocated to the US government on a primary basis for radiolocation operations. The Amateur Radio Service uses these frequencies on a secondary basis. Amateur Radio has proven to be a successful secondary user causing no interference to government operations. These government operations, primarily radar, intermittently cause low to moderate levels of interference to Amateur Radio operations. This interference is tolerable because of the flexible nature of Amateur Radio operations. There is no evidence that amateur operations interfere with the usual government radiolocation services found on these sub-bands.

RM-9267 does not contain or propose any technical solutions that would allow Amateur Radio operators to continue to use these bands without causing serious interference to the proposed PMRS operations. Operation of like type equipment, utilizing like types of emission and occupied bandwidth with similar coverage operating on the same frequency will result in interference. The frequencies cannot be time shared. No commercial entity will tolerate waiting for an amateur conversation to complete, regardless of such conversation's relative importance. The petitioner is attempting to obtain sufficient spectrum for the licensee members of their association to operate their PMRS systems on unshared (or very lightly shared) frequencies to provide immediate access and interference free operation.

Should Land Mobile radio operations become the primary user of these sub-bands, the certain to occur amateur interference to the proposed PMRS operations will result in immediate demands for the amateur operations to cease. This will render the amateur use on a secondary basis moot, and will destroy the public service communications capabilities described above.

Reallocation of the 420 to 430 MHz and 440 to 450 MHz sub-bands, or any other amateur band, to any Land Mobile or similar use will effectively terminate all Amateur Radio Service use of those bands, regardless of which service is primary and which is secondary. These two sub-bands comprise 49% of the Amateur Radio Service allocations between 30 MHz and 900 MHz. Loss of this spectrum WILL be very destructive to amateur VHF-UHF operations in general and will virtually destroy the public service capabilities described above.

RM-9267 does not propose any replacement spectrum at all, equivalent or not.

Implementation of RM-9267 would eliminate public services now provided by Amateur Radio operators. Loss of this spectrum will also eliminate many opportunities for public access to the radio spectrum through the Amateur Radio license.. Even if equivalent spectrum were made available, the fair cost of moving the existing Amateur Radio activities is very high.

Transfer of existing 420 to 430 MHz and 440 to 450 MHz sub-band operations to other Amateur Radio bands would not be easy in most cases. In many areas of the country there is no suitable spectrum that is currently unoccupied. In all cases it would be extremely

expensive. Viable higher frequency bands will require as much as 3 times the amount of equipment to accomplish the same task as is needed in the 420 to 430 MHz and 440 to 450 MHz sub-bands.

The Amateur Radio Service allocation at 902 to 928 MHz is not viable replacement spectrum because the band is already heavily occupied with several layers of licensed and unlicensed services. The licensed services have already crowded much of the Amateur Radio activity into the outer one MHz at the top and bottom of the band. Recent rule changes have eliminated the usability of the top MHz. Much of the Part 15 (unlicensed) use of this band is residential and small business, which would be rendered useless by even low powered amateur transmitters operating in their vicinity.

The 1.2 GHz amateur band is the lowest frequency band with available spectrum allocated to the amateur service which is even marginally suitable to the tasks described above. In order to move the fixed operations of the portion of these systems which are located in Arizona and New Mexico, we estimate that a commercial contractor would have to expend over one million dollars to supply hardware, engineering, and installation to replace this existing fixed equipment. We estimate that it would require at least the same amount of one million dollars to provide the additional sites and equipment required to restore the coverage and performance lost when moving from 400 MHz to 1.2 GHz. It should be noted that the average fixed duplex link path distance for the systems listed above is approximately 90 miles with many more than 130 miles long, a distance quite impractical to make reliable at 1.2

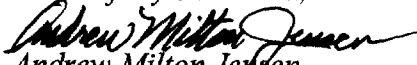
GHz. Converting to 1.2 GHz will cause mobile relay coverage will suffer tremendously.

Within my region of operation, and utilizing the systems described above, we have approximately 475 amateurs of whom each one has a base station, at least one mobile station, and one hand held station. All this equipment will have to be replaced with like performance equipment at 1.2 GHz, at an estimated commercial cost of not less than 1.5 million dollars.

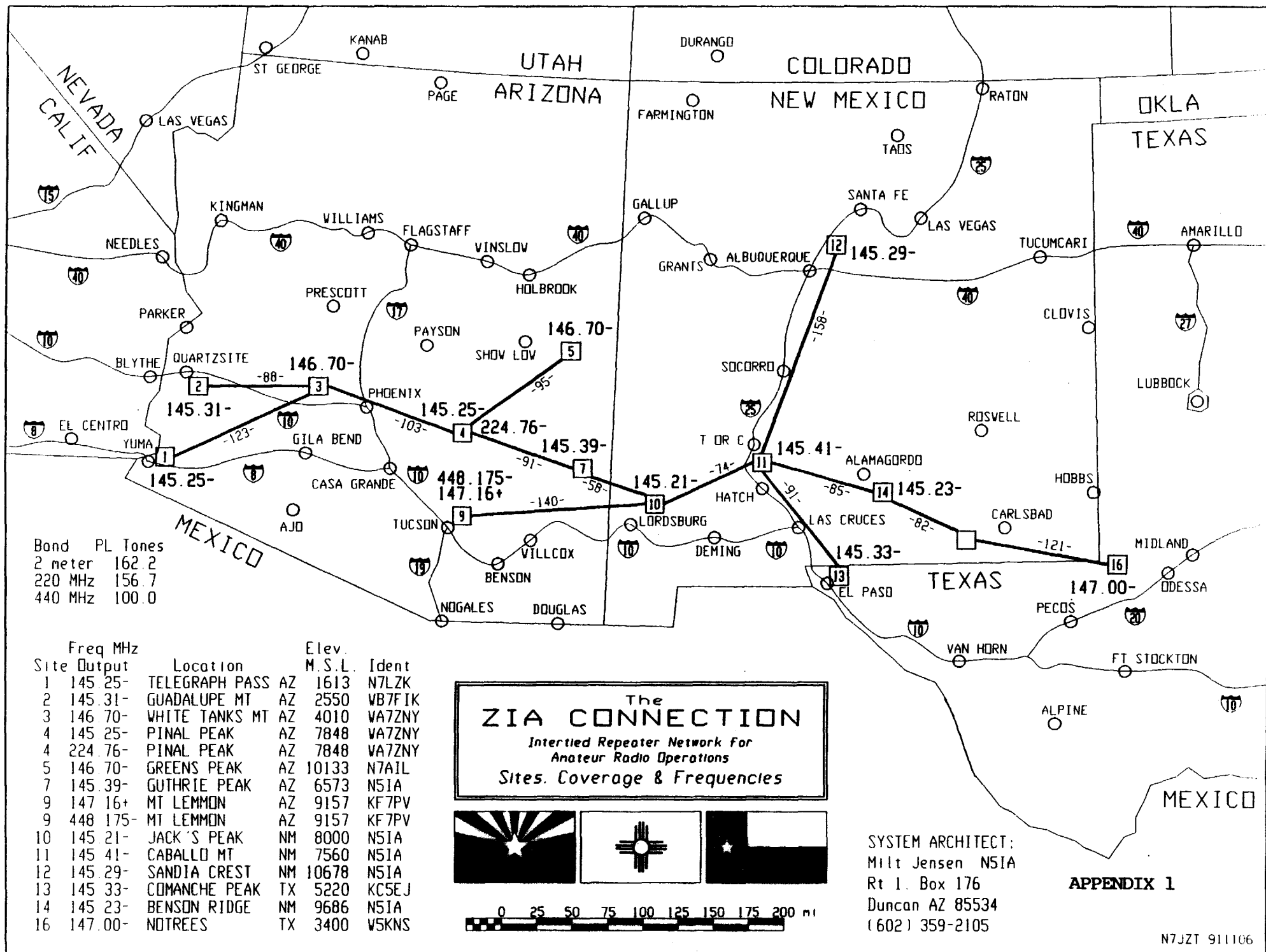
Amateur Radio operators have historically provided, and continue to provide to this day, emergency communications when most if not all other communications fail during disaster situations. This capability is a National Resource of immeasurable value. Amateur Radio emergency communications capabilities in the southwestern United States are a vital resource which will be severely damaged and restricted should the applicable portions of RM-9267 be implemented.

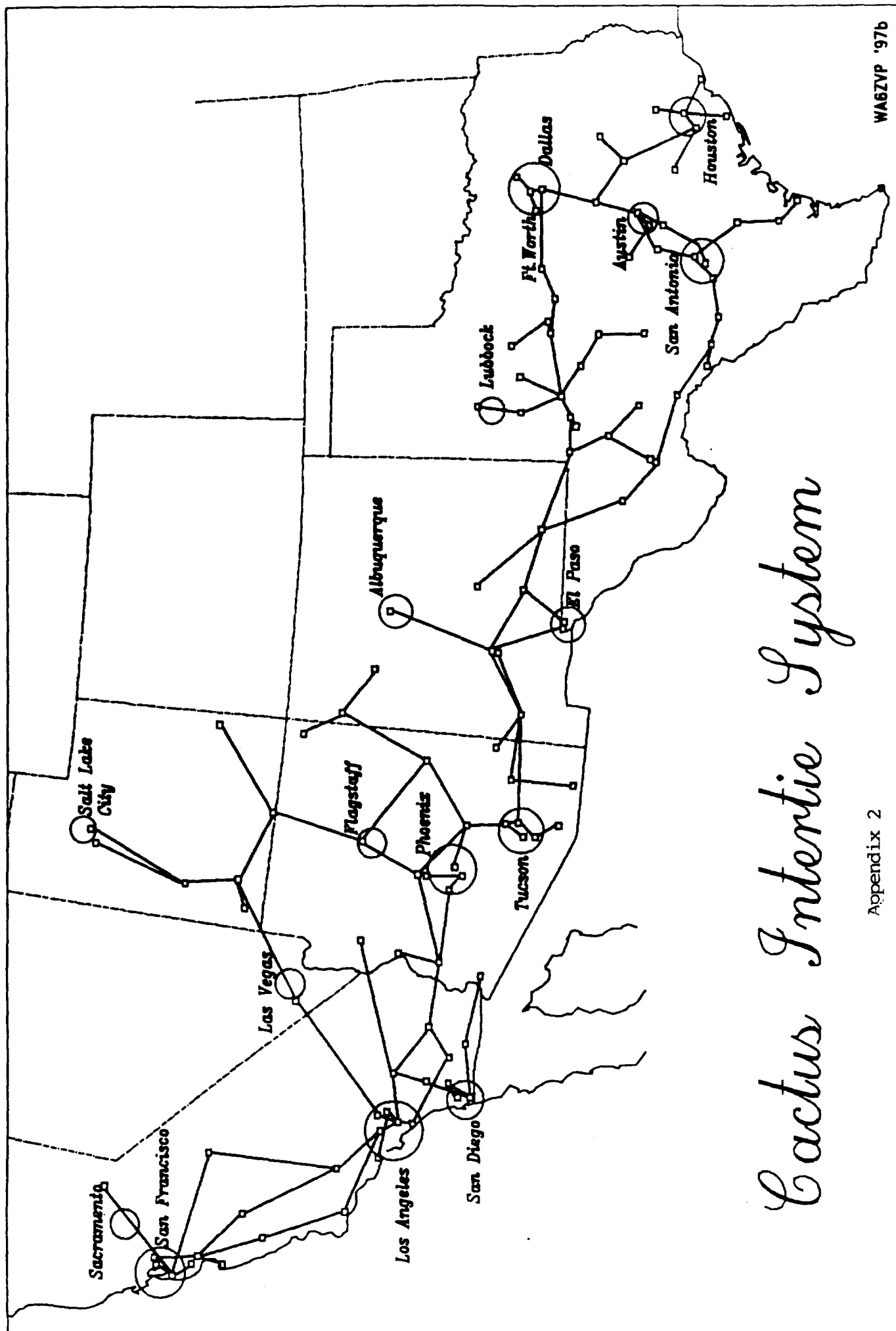
The portions of RM-9267 applicable to the 420-450 MHz Amateur bands are devastating to the amateur service and the public access to emergency services. I hereby urge and most strenuously request the Commission to summarily deny any and all portions of RM-9267 applicable to the 420-450 MHz spectrum.

Respectfully submitted,


Andrew Milton Jensen

Attached: Appendix 1, 2





Cactus Intertie System

Appendix 2

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